In re Application of:

Jay M. Short

Attorney Docket No.: DIVER1200-3

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Filed: January 2, 2001

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In the claims

Please add new claims 6 and 7.

Please amend claims 1 and 3 as follows:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A process for identifying clones of a recombinant library produced from DNA derived from two or more uncultivated organisms which express an enzyme with a desired characteristic, comprising:

screening in the liquid phase a library of <u>a mixture of</u> expression clones randomly produced from DNA of two or more <u>randomly selected</u> from uncultivated organisms, said screening being effected on expression products of said clones to thereby identify clones which express an enzyme with a desired characteristic.

- 2. (Previously Presented) The method of claim 1, wherein the DNA is modified or mutagenized prior to formation of the recombinant library.
- 3. (Currently Amended) A process of screening clones having DNA recovered from uncultivated organisms to identify an enzyme expressed therefrom having a specified enzymatic characteristic, which process comprises:
- (i) recovering DNA selectively randomly selected from a mixed DNA population derived from two or more of uncultivated organisms by contacting the recovered DNA in a liquid phase assay under hybridizing conditions with at least one hybridizing probe containing a full-length coding region sequence or a partial coding region sequence for an enzyme having the specified enzymatic characteristic;
- (ii) transforming a host cell with the recovered DNA to produce a library of clones; and
- (iii) screening for the specified enzymatic characteristic in an expression product prepared by expressing the library of clones to obtain expression products, which are screened to identify the specified enzymatic characteristic.

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4. (Previously Presented) The method of claim 3, wherein the DNA is modified or mutagenized prior to forming the library of clones.

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- 5. (Previously Presented) The method of claim 3, wherein the specified enzymatic characteristic is selected from pH stability, temperature stability and substrate specificity of enzymatic activity.
- 6. (New) The method of claim 1 or 3, wherein the host cell is a prokaryotic organism.
 - 7. (New) The method of claim 6, wherein the host cell is *E. coli*.